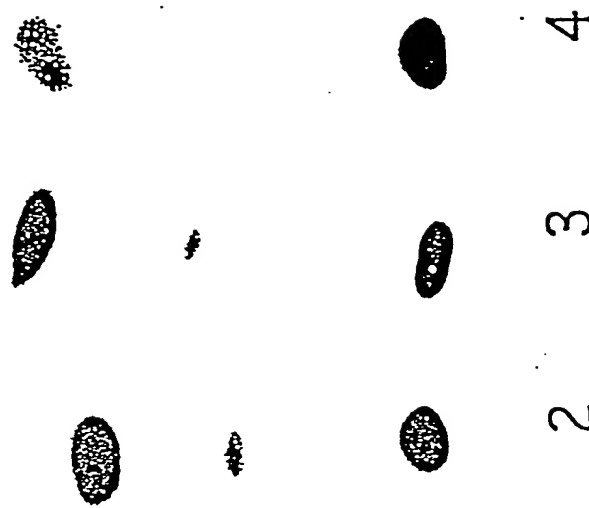


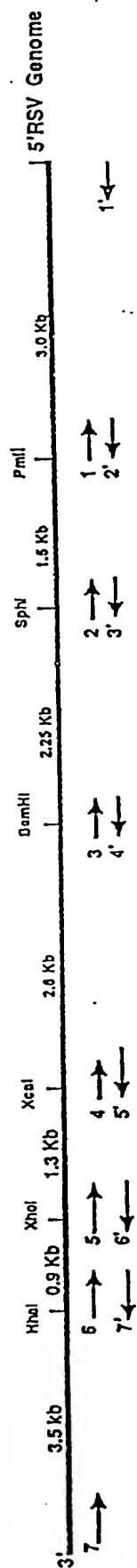
FIG. 1



Acetylated Forms of  
[<sup>14</sup>C] Chloramphenicol

Unmodified  
[<sup>14</sup>C] Chloramphenicol

FIG. 2

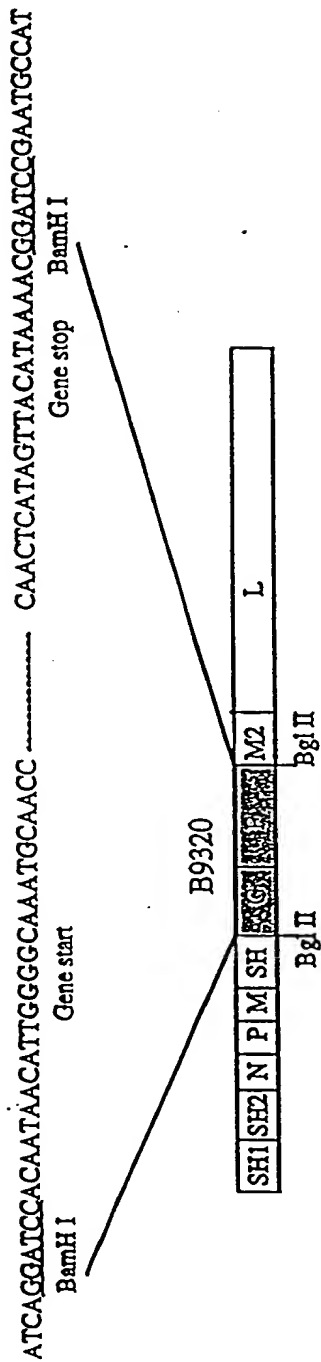


## Primer Sequences:

- 1: 5' GTTTAACACGTTGGTGAG  
 2: 5' ACATATAGGCATGCACC  
 3: 5' GACAAAATGGATCCCAT  
 4: 5' TGGTTGGTATACCAAGTGA  
 5: 5' TACCAAGAGCTCGAGTCA  
 6: 5' TTTACCATATGGGCTAATGT  
 7: 5' ACGCGAAAAATGCGTACA  
 1': 5' ACGAGAAAAAAGTGTCAC  
 2': 5' CTCACCAACGTGTTAAAC  
 3': 5' GGTGCATGCCATATATGT  
 4': 5' AATGGGATCCATTTTGTC  
 5': 5' AACACTGGTATACCAACCA  
 6': 5' TGA CTGGAGCTCTTGGA  
 7': 5' ACATTAGGCATATGGTAAA

FIG. 3

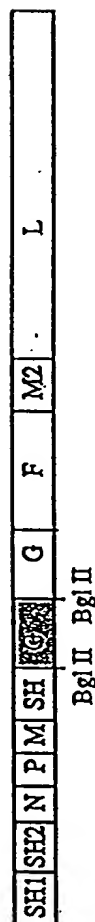
A. RSVB-GF



B. RSVB9320G-F/M2



C. RSVB9320G-SH/G



FIGS. 4A-C

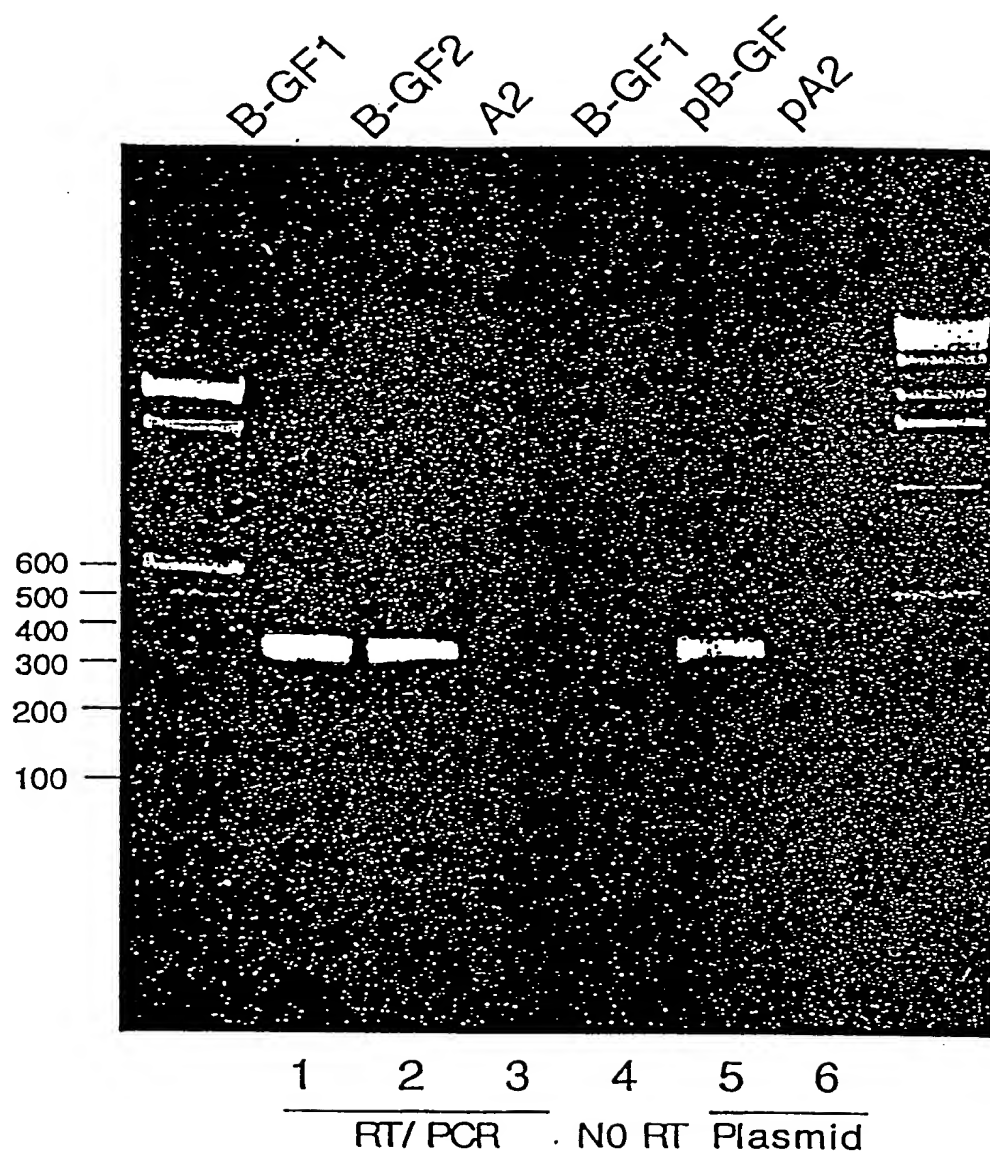


FIG. 5



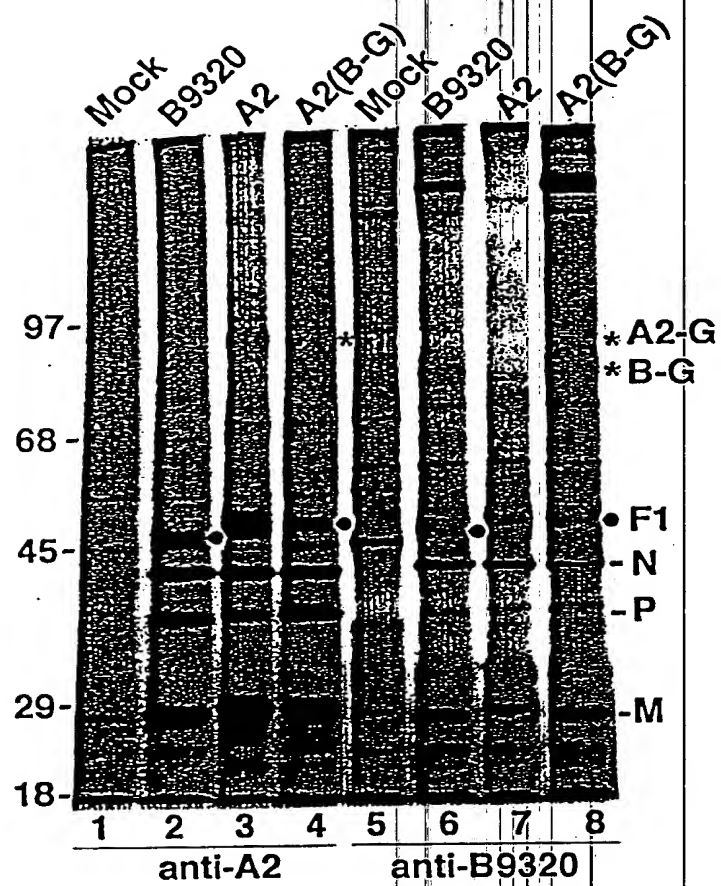


FIG. 7

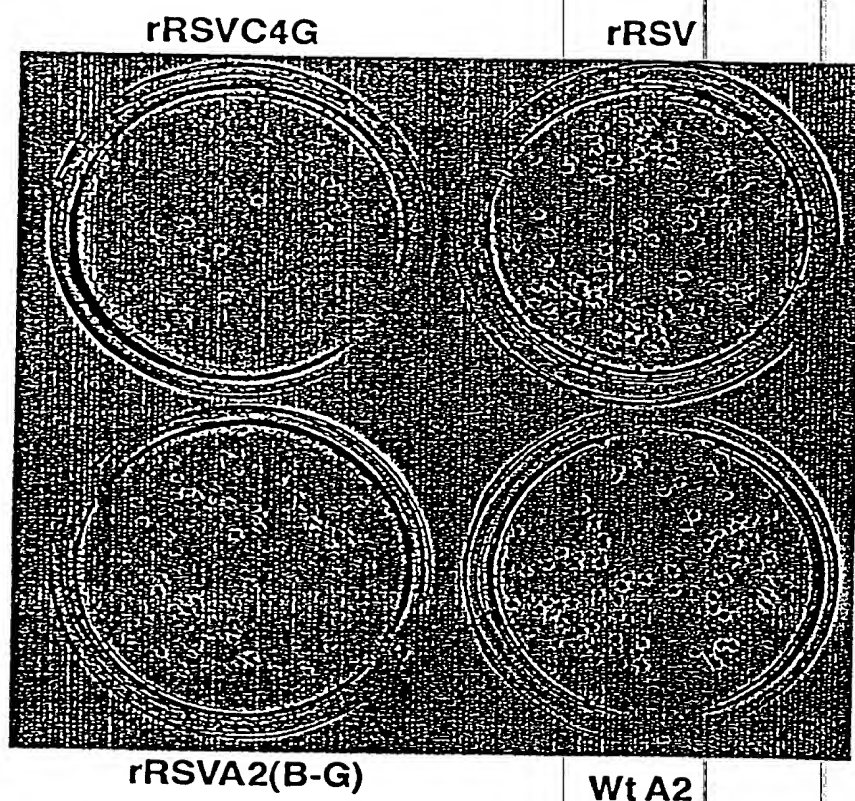


FIG. 8



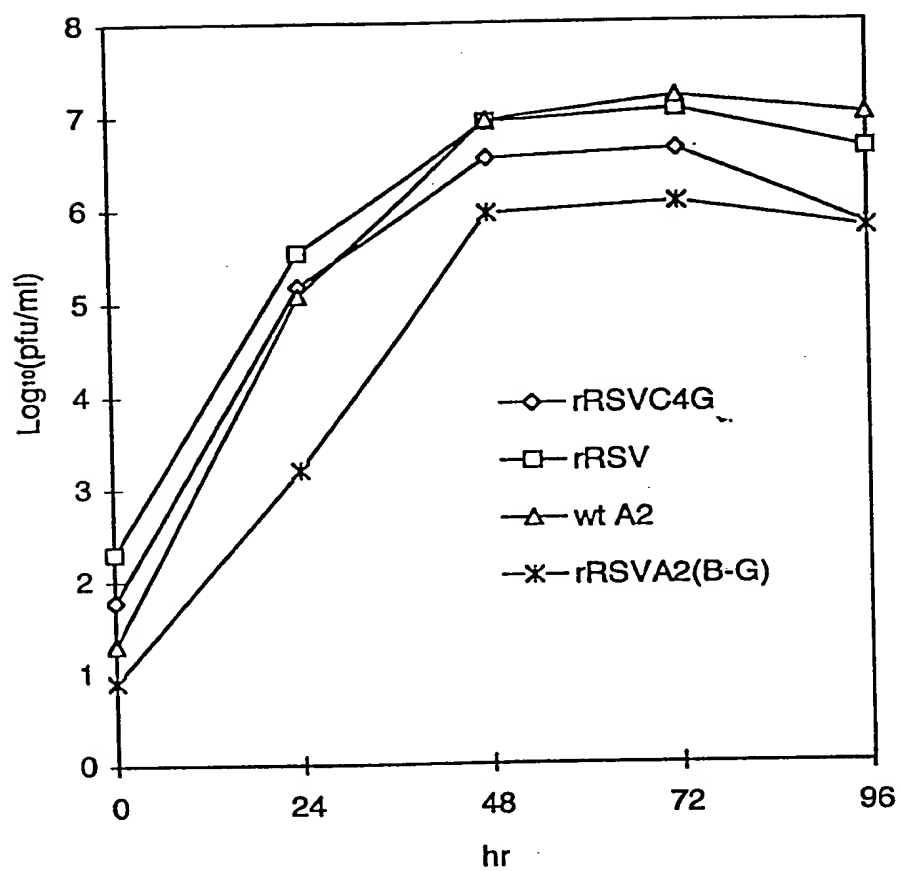


FIG. 9

75 MDPIINGNSANVILT DSYLKGVISFSECNA LGSYIFNGPYLKNDY TNLISRQNPLIEHVN LKKLNITQSLISKYH  
 150 KGEIKLEEPTYFQSL LMTYKSMTSSEQIAT TNLKKIIRRAIEIS DVKVYAILNKLGLKE KDKIKSNNGQDEEDNS  
 225 VITTIKKDDILSAVK DNQSHLKADKNHSTK QKDTIKTTLKKLMC SMQPPSWLIHWFNL YTKLNNILTQYRSNE  
 300 VKNHGFTLIDNQTLG GFQFILNQYGCIVYH KELKRITVTYVYNQFL TWKDISLSRLNVCLI TWISNCLNTLNKSLG  
 375 LRCGFNNVILTQLFL YGDCILKLFHNEGFI IIEKEVEGFIMSLIIN ITEEDQFRKRFRYNSM LNNITDAANKAQKNL  
 450 LSRVCHTLDDKTVDSD NIINGRWIILLKSKFL KLKLAGDNINLNLNLS ELYFLFRIFGHPMV D EQAMDADVKNINCNET  
 525 KFYLLSSLSMLRGAF IYRIIKGFVNYYNRW PTLRNAIVLPLRWLT YYKLNTPSLLLELTF RDLIVLSGLRFYREF  
 600 RLPKPKVDLEMIINDK AISPPKNLIWTSFPR NMPSHIQNYIEHEK LKFSESDKSRRVLEY YLRDNKFNECDLYNC  
 675 VVNQSYLNNPNHVVS LTGKEBELSVGRMFA MQPGMFRQVQILAEK MIAENILOFFPESLT RYGDLELQKILELKA  
 750 GISNKSNNRYNDNNYNN YISKCSIIITDLSKFN QAFRYETSCICSDVL DELHGVQSLFSLWHL TIPHVTIICTYRHAP  
 825 PYIGDHIVDLNNVDE QSGLYRYHMGGIEGW CQKLWTIEAISLLDL ISLKGKFSITALLNG DNQSIDISKPIRLME  
 900 GQTHAQADYLLALNS LKLLYKEYAGIGHKL KGTETYISRDMQFMS KTIQHNGVYYPASIK KVLRVGPWINTILDD  
 975 FKVSLESIGSLTQEL EYRGESLLCSLIFRN VMLYNQIALQKKNHA LCNNKLYLDILKVLK HLKTFNLDNDIDTAL  
 1050 TLYMNLPLMFGGDP NLLYRSFYRRTPDFL TEAIVHSVFILSYTT NHDLDKQLQDLSDDR LNKFLTCTIITFDKNP  
 1125 NAEFVTLMRDPQALG SERQAKITSEINRLA VTEVLSTAPNKIFSK SAQHYTTTEIDLNDI MQNIEPTYPHGLRVV  
 1200 YESLPFYKAEKIVNL ISGKTSITINILEKTS AIDLTIDIDRATETMR KNITILLIRILPLDCN RDKREILSMENLSIT  
 1275 ELSKVYVREBSWSLSN IVGVTSPSIMYTMDI KYTSTISSGIIIEK YNVNSLTRGERGPTK PWVGSSTQEKKIMPV  
 1350 YNRQVLTKKQRDQID LLAKLDWYASIDNK DEFMEELSIGTLGLT YEKAKKLFPQYLSVN YLHRLTVSSRPCEFP  
 1425 ASTPAYRTTNVHFDI SPINRILTEKYGDED IDIVFQNCISFGLSL MSVVEQFTNVCPNRI ILIPKLINEIHLMKPP  
 1500 IFTGDVDIHLKQVI QKQHMFLPKISLTQ YVELFSLNKTILKSGS HVNSNLIILAHKISDY FHNTYILSTNLAGHW  
 1575 ILTIQIMKDSKGIFE KDWGEGYITDAMFIN LKVFENAYKTYLLCF HKGYGKAKLECDMNT SDLLCVLELIDSSYW  
 1650 KSMKVFLEQKVIKY ILSQDASLHRVKGCH SFKLWFLKRLNVAEF TVCPWVVVNIDYHPTH MKAAILTYIDLVRMGL  
 1725 INTDRIHIKNKHKFN DEFYTSNLEFYINYNF SDNTHLLTKHIRIAN SELENNYNNKLYHPTP ETLENILANPIKSND  
 1800 KKTLDNDYCIGKNVDS IMLPLLSNKKLIKSS AMIRTNYSKQDLNVL FPMVVIDRIIDHSGN TAKSNQLYTTTSHQI  
 1875 SLVHNSTSLYCMPLW HHINRFNFVFSSTGC KISIEYILKDLKIKD PNCFIAFIGEGAGNLL LRTVVELHPDIRYIY  
 1950 RSLKDCNDHSLPIEF LRLYNGHINIDYGEN LTIPATDATNNIHS YLHIKFAEPIISLFVC DAELSIVTVNWSKIIIT  
 2025 EWSKGVKCKYCCSV NKCMILVYKHAQDDI DFKLDNITILKTYVC LGSKLKGSEVYLVLT IGPANIFFPVFNVVQN  
 2100 AKLILSRITKFNIMPK KADKESIDANIKSLI PFCLCYPITKKGINTA LSKLSVSVSGDILSY SIAGRNEVFSNKLIN  
 2165 HKHMNILLKWFNHVILN FRSTELNYNHLYMVE STYPVLSSELINSLTT NELKKLIKITGSLLY NFHNE

Charged Clusters (Amino Acids that are underlined were changed to alanines)

Mutations in cpts-248/404

Mutation in cpts530

FIG. 10

MDPIINGNSANVYLT	DSYLKGVISFSECNA	LGSYIFNGPYLKNDY	TNLI SRQNPLIEHMN	LKKNITQSLISKYH	75
KGEIKLEETPYFQSL	LMTYKSMTSSEQIAT	TNLLKKIIRRAIEIS	DVKVYAILNKLGLKE	KDKIKSNNGQEDNS	150
VTTTIKDDILLSAVK	DNQSHLKADKNHSTK	QKDTIKTTLKKLMC	SMQHPPSWLIHWFNL	YTKLNNILTQYRSNE	225
VKNHGFTLIDNQTL	GFQFILNQYGCIVYH	KELKRITVTYTNQFL	TWKDISLSRLNVCLI	TWISNCLNTLNKSLG	300
LRCGFNNVILTQFL	YGDCILKLFHNEGFI	I I KEVEGFIMSLILN	ITEEDQFRKRFFYNM	LNNITDAANKAQKNL	375
LSRVCHTLDDKTVD	NIINGRWIILLSKFL	KL I KLAGDNLNLNLS	ELYFLRIFGHPMVD	ERQAMDVAVKINCNET	450
KFYLLSSLSMLRGAF	IYRIITKGFVNNYNRW	PTLRNAIVLPLRWLT	YKLNNTYPSLLELTE	RDLIVLSGLRFYREF	525
RLPKKVDLEMIINDK	AISPPKNLIWTSFPR	NYPMSHIQNYIEHEK	LKFSSEDKSRRVLEY	YLRDNKFNECDLYNC	600
VVNQSYLNNPNHVS	LTGKERELSVGRMFA	MQPGMFRQVQILAEK	MIAENILQFFPESLT	RYGDLELQKILELKA	675
GISNKSNRINDNVAN	YISKCSIITDLSKEN	QAFRYETSCICSDVL	DELHGVSLSFSWLHL	TIPHVITICTYRHAP	750
PYIGDHIVDLNNVDE	QSGLYRYHMGGIEGW	CQKLWTIEAISLLDL	ISLKGKFSITALING	DNQSIDISKPIRLME	825
GQTHAQADYLLALNS	LKLLYKEYAGIGHKL	KGTETYISRDMQFMS	KTIQHNGVYYPASIK	KVLRVGPWINTILDD	900
EKVSLESIGSLTQEL	EYRGESLLCSLI FRN	VWLYNQIALQKKNHA	LCNNKLYLDILKVLK	HLKTFNLDNIDTAL	975
TYMNLPMLEGGGDP	NLLYRSFYRRTPDFL	TEAIVHSVFILSYIT	NHDLKDKLQDLSDDR	LNKFLTCTITFDKNP	1050
NAEFVTLMRDPQALG	SERQAKITSEINRLA	VTEVLSTAPNKIFSK	SAQHYTTTEIDINDI	MQNIEPTYPHGLRVV	1125
YESLPFYKAEKIVNL	ISGTSITNILEKTS	AIDLTDDIDRATEMMR	KNITLLIRILPLDQN	RDKREILSMENLSIT	1200
ELSKYVRERSWSLSN	IVGVTSPSIMYTMDI	KYTTSTISSGIIIEK	YVUNSLTRGERGPTK	PWVGSSTQEKKTMPV	1275
YNRQVLTKKQORDID	LLAKLDWVYASIDNK	DEFMEELSIGTIGLT	YEKAKKLFPOYLSVN	YLHRLTVSSRRPQEPF	1350
ASIPAYRTTNYHFDI	SPINRILTEKYGDED	IDIVFQNCISFGLSL	MSVVEQFTNVCPNRI	ILLIPKLINEIHLMKPP	1425
IFTGDVDIHKLKQVI	QKQHMFLPKISLTQ	YVELFSLNKTLSGS	HVNSNLILAHKISDY	FHNTYILSTNLACHW	1500
ILITIQLMKDSKGIFE	KDWGEGYITDHFMIN	LKVFFFNAYKTYLLCF	HKGYGKAKLECDMNT	SDLLCVLELIDSSYW	1575
KSMKSVFLEQKVIKY	ILSQDASLHRVKGQH	SFKLWFLKRLNVAEF	TVCPWVNNIDYHPTH	MKAILTYIDLVRMGL	1650
INIDRIHIKNKHKN	DEFYTSNLFYINYNF	SDNTHLLTKHIRIAN	SELENNYNKLYHPTP	ETLENILANPIKSND	1725
KKTLINDYCIGKNVDS	IMLPLLSNKKLIKSS	AMIRTNYSKQDLYNL	FPMVVIDRIIDHSGN	TAKSNQLYTTTSHQI	1800
SLVHNSTSLYCMPLPW	HHINRFNFVFSSTGC	KISIEYILKDLKIKD	PNCIAFIGEGAGNLL	LRTVVELHPDIRYIY	1875
RSCLKDCNDHSLPIEF	LRLYNGHINIDYGEN	LTIPATDATNNIHWS	YLHIKFAEPISLFVC	DAELSVTVNWSKIII	1950
EWSKHVRCCKYCQSV	NKCMLIVKYHAQDDI	DFKLDNITILKTYVC	LGSKLKGSEVYLVLT	IGPANIFPVFNVVQN	2025
AKLILSRTKNFIMPX	KADKESIDANIKSLI	PFLCYPITKKGINTA	LSKLKSUVSGDILSY	SIAGRNEVFSNKLIN	2100
HKHMNLIKWFNHVLN	FRSTELNYNHLYMVE	STYPYLSELNLSLTT	NELKLIKITGSLLY	NFHNH	2165

C Cysteine residues

C Cysteine residues that were changed to valine or aspartic acid

C Cysteine residue deleted

FIG. 11

